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November 19, 2007

**By Hand**

Mr. Terry Darton  
thdarton@deq.virginia.gov  
Air Permit Manager  
DEQ Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

Re: Comments on Draft State Operating Permit  
for the Mirant Potomac River Generating Station

Dear Mr. Darton:

Mirant Potomac River, LLC ("Mirant") appreciates the opportunity to provide comments on the draft state operating permit offered by the Department of Environmental Quality ("DEQ") for public comment on October 19, 2007. There is a long and complicated history that predates the development of this draft permit. An existing permit and other State Air Pollution Control Board actions are the subject of litigation. Mirant hopes that the ultimate permit issued for the Potomac River Generating Station ("PRGS") will reflect sound science and applicable law. Along those lines, these comments:

provide the legal framework for issuance of the permit;

identify certain aspects of the permit that merit adjustment;

address the questions posed by the State Air Pollution Control Board (the "Board") in the order listed in the Public Notice; and

propose an alternative permit as authorized by 9 VAC 5-80-850.

**I. Legal Framework**

The criteria to be considered when issuing a state operating permit are found at 9 VAC 5-80-850.A. That provision states that a permit may be issued to a facility in a nonattainment area if its terms and conditions demonstrate (1) the facility will not cause a violation of applicable regulations, and (2) the facility will be in compliance with applicable emission standards. The articulated rationale for issuing a state operating permit to the Plant is to ensure compliance with the National Ambient Air Quality Standards ("NAAQS"). This is not a new source review ("NSR") permit, as this is an existing facility that has not been modified in a manner that would

trigger NSR. Accordingly, there is no legal or regulatory basis for imposing operational restrictions, best available control technologies, or emission limitations that go beyond what is necessary to ensure compliance with the NAAQS. Moreover, the regulations require that "emission standards shall only include limitations that are determined by the Board to be achievable through application of production processes or available methods, systems, and techniques, including, but not limited to, any of the following: emissions control equipment, fuel cleaning or treatment, fuel combustion techniques, or substitution of less toxic or nontoxic materials." 9 VAC 5-80-850.c.3. In other words, the Board may not impose a limit that is not achievable.

State operating permits are traditionally issued by DEQ staff after extensive discussion and negotiation with the regulated entity and interested stakeholders. Because the Board has assumed responsibility for issuing this permit, the traditional process has not been followed, which is at the heart of the delay in issuing this permit. Mirant has negotiated at least four different permits or other mechanisms to resolve the issues with DEQ only to have the Board reject the proposal and request continued negotiations, without even clear guidance as to what the Board desires. The Board is not equipped to and cannot negotiate on its behalf. As a result, and through no fault of the DEQ staff, the permitting process has been lengthy, frustrating and ineffective, not to mention unlawful. Once again, the proposed permit includes provisions requested by the Board that are not achievable, and that are not necessary to ensure compliance with the NAAQS, which is the sole lawful purpose of the permit.

## **II. Comments on the Permit**

### **A. Name of the Company and Address**

Mirant's address is 1400 North Royal Street, Alexandria, Virginia, 22314. This is also the location of the facility, the Potomac River Generating Station. This should be corrected in the final permit.

### **B. Condition 1. Capacity of Coal Handling Equipment**

The draft permit includes a table identifying material handling equipment capacities. That table contains incorrect information. The data in the table below reflects the corrected information. We recognize that the note below the chart in the draft permit states that DEQ used the information in the chart for modeling and that the information in the chart does not form an enforceable limitation. We are providing this information to make sure the record is clear.

<b>Existing Equipment</b>			
<b>Reference No.</b>	<b>Equipment Description</b>	<b>Maximum Rated Capacity (as calculated from CEM data)</b>	<b>Manufactured Date</b>
C1 Cycling Unit	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low NOx burners.	1053 MMBtu/hr	1949



C2 Cycling Unit	Combustion Engineering, natural circulation, tangentially coal-fired with superheater and economizer with low NOx burners.	1029 MMBtu/hr	1950
C3 Base Unit	Combustion Engineering, controlled circulation, tangentially coal-fired with superheater, single reheater and economizer with low NOx burners and separated over fired air.	1018 MMBtu/hr	1954
C4 Base Unit	Combustion Engineering, controlled circulation, tangentially coal-fired with superheater, single reheater and economizer with low NOx burners and separated over fired air.	1087 MMBtu/hr	1956
C5 Base Unit	Combustion Engineering, controlled circulations, tangentially coal-fired with superheater, single reheater and economizer with low NOx burners and separated over fired air	1107 MMBtu/hr	1957
<b>Reference No.</b>	<b>Equipment Description</b>	<b>Nominal Rated Capacity</b>	<b>Manufactured Date</b>
Ash Silos	Two (2) fly ash silos and one (1) bottom ash silo	<b>Fly Ash: 82,650 ft<sup>3</sup> (ea) Bottom Ash: 34,619 ft<sup>3</sup></b>	n/a
Ash Loader	Fly ash and bottom ash truck loading from silos and ash truck roadway dust controls	<b>250 tons/hr per loader</b>	n/a
Coal Handling	Coal pile wind erosion, coal stack-out conveyor system, coal railcar dumper	<b>1.2 million tons per year</b>	n/a
Sodium Sequacarbonate Handling Dry Sorbent	Pneumatic upload system, full enclosure	n/a	n/a

#### **C. Condition 14**

Condition 14 references requirements for annual monitoring of carbon monoxide that appear redundant and perhaps in conflict with similar requirements in Condition 15. The requirements with respect to CO should be clarified and contained within paragraph 15. Mirant requests that the language indicate that past compliance has been determined using AP 42 emission factors and future monitoring results shall not be used to determine past compliance status or baseline for any purpose.

#### **D. Condition 17**

The first sentence of condition 17 in the draft state operating permit should be changed. Currently, the sentence references "each fabric filter baghouse." This should be changed to "each ash silo fabric filter baghouse." The only baghouses on the property are on the two fly ash silos and one bottom ash silo. Mirant has not proposed to add or modify those systems, and no other baghouses are technically feasible.

#### **E. Condition 19 b**

All of the baghouses vent into ductwork. Therefore there are no visible emissions from any of the baghouses and the requirement for daily observation of the baghouses is unnecessary. This requirement should be removed from the permit.

**F. Condition 21**

A minimum sulfur content of 0.65% is specified in the draft permit. The only reason for this condition is to ensure some amount of sorbent is injected to control HCl emissions from the plant. Mirant proposed to conduct a HCl stack test to determine the quantity of sorbent needed to control HCl, as the sorbent captures HCl and other acid gases (such as HF and SO<sub>3</sub>) which are more reactive than SO<sub>2</sub>, prior to any SO<sub>2</sub> reduction. Test data have demonstrated that when the sorbent is injected in a quantity to achieve required reductions in SO<sub>2</sub>, over 95% of HCl is captured in the process. The final permit should delete the reference to a minimum coal SO<sub>2</sub> content limit and place a minimum sorbent injection limit in its place.

To control HCl, Mirant proposes to meet the SO<sub>2</sub> emission rates listed in the permit and maintain a sodium sesquicarbonate (or equivalent approved by DEQ) injection rate of 600 lb/hr or greater. A 600 lb/hr of sodium sesquicarbonate injection is sufficient to remove 12.5% SO<sub>2</sub> from flue gas when burning 0.65% sulfur coal at full load. If coal sulfur content drops, the 600 lb/hr sodium sesquicarbonate injection rate will be more than sufficient to control HCl. If a dry sorbent other than sodium sesquicarbonate is approved by DEQ, the required minimum injection rate should be adjusted to account for differences in its removal efficiency.

**G. Condition 22**

Our vendors take monthly samples from their tanks. The contractors provide a certification to Mirant of their sampling results. We ask that this provision be clarified to make it clear that this monthly certification from the vendors' tanks is an acceptable means of complying with this provision.

**H. Conditions 23 - 27**

The NAAQS for NO<sub>x</sub> is an annual limit. A 30-day rolling limit is proposed in the draft permit. Mirant has provided modeling that demonstrates that the NAAQS are met at an annual average NO<sub>x</sub> level of 0.32 lb/MMBtu. Accordingly, neither the 30-day rolling limit nor the lbs/hr 30-day rolling average is necessary.

**I. Condition 28**

As Board members and DEQ staff are aware, the stacks at the Plant are short, due to the proximity to Reagan National Airport, and do not meet good engineering practice ("GEP") height. As a result, when the Plant operates at a reduced capacity, there is less velocity or lift for emissions from the stacks and a greater local impact from emissions. When the plant operates at

a higher capacity, the velocity is greater and the local impact is reduced. The NAAQS are protective of local air quality with an adequate margin of safety. Thus, the pollutant levels can vary depending on the operations of the Plant and still be protective of local air quality. Accordingly, various operational scenarios are necessary to allow Mirant flexibility in its operations while still continuing to protect local air quality. Of course, if the stack merge project were approved, the Plant could operate under one scenario as the local downwash condition would be significantly reduced. A post-stack merge permit (such as that proposed by Mirant at the conclusion of these comments) would be more understandable and more easily enforced.

As noted during the October Board meeting, additional scenarios beyond those included in the draft permit are needed because complying rates can vary widely, such as with two cycling units and one base unit, where the complying goes from 0.29 lb/MMBtu to 0.35 lb/MMBtu depending on which units are operating. Variations in operating units are acceptable because units do not regularly turn on and off on a 3-hour to 24-hour basis. When they do, Mirant previously agreed in the EPA Administrative Consent Order to use the lower complying rate when transitioning between any two operating scenarios that may occur in a 24-hour period.

Mirant provided 25 operating scenarios to DEQ on October 5, 2007. These same scenarios were provided to DEQ by ENSR in September. Mirant again provides the following list of necessary scenarios to reflect the variety of operating conditions at the Plant, that are also NAAQS compliant.

<b>Operating Scenario (Units Operating)</b>	<b>SO2 3 hr block avg lbs/MMBtu per unit</b>	<b>SO2 3 hr block avg lbs/hr</b>	<b>SO2 24 hr block avg lbs/MMBtu</b>	<b>SO2 24 hr block avg lbs/day</b>
1 (1 cycle)	0.99	1042.47	0.99	25,019.28
2	1.02	1049.58	0.90	22,226.40
3 (1 base)	0.80	814.40	0.66	16,125.12
4	0.77	836.99	0.60	15,652.80
5	0.70	774.90	0.53	14,081.04
1 & 2 (2 cycle)	0.50	1041.00	0.48	23,984.64
1 & 3 (1 cycle/1 base)	0.44	911.24	0.41	20,378.64
1 & 4	0.43	920.20	0.39	20,030.40
1 & 5	0.42	907.20	0.40	20,736.00
2 & 3	0.45	921.15	0.39	19,159.92
2 & 4	0.44	931.04	0.36	18,282.24
2 & 5	0.43	918.48	0.37	18,967.68
3 & 4 (2 base)	0.39	820.95	0.33	16,671.60



3 & 5	0.38	807.50	0.32	16,320.00
4 & 5	0.37	811.78	0.28	14,743.68
1, 2, 3 (2 cycle/1 base)	0.35	1085.00	0.29	21,576.00
1, 2, 4	0.30	950.70	0.27	20,535.12
1, 2, 5	0.29	924.81	0.28	21,430.08
1, 3, 4 (1 cycle, 2 base)	0.28	884.24	0.25	18,948.00
1, 3, 5	0.27	858.06	0.25	19,068.00
1, 4, 5	0.27	876.69	0.24	18,702.72
2, 3, 4	0.28	877.52	0.24	18,051.84
2, 3, 5	0.28	883.12	0.25	18,924.00
2, 4, 5	0.27	870.21	0.23	17,790.96
3, 4, 5 (3 base)	0.25	803.00	0.21	16,188.48

**J. Condition 28**

The PM, PM10, and PM2.5 averaging periods should be 24-hour averages instead of 1-hour averages, as the NAAQS for those pollutants are given on a 24-hour basis (and annual). There is no basis for establishing a one-hour limit. Moreover, it is contrary to the measurement technique, Method 5, which uses an average of 3 one hour runs (a three hour average) to determine compliance.

**K. Condition 30**

The basis for the facility-wide HCl and HF limits has not been provided to Mirant, although it has been requested. These limits are extremely low and do not appear to be supported by the available information. Applying the same methodology used to derive the annual PM limits, an HCl limit of 231.4 tons/yr and an HF limit of 83.8 tons/yr would be appropriate. *See also* Paragraph B on page 8 of these comments on the annual SO2 limit of 3813 tons per year.

**L. Conditions 33 and 37b**

A requirement to determine ESP removal efficiency during stack testing and on an annual basis is extraordinary. As long as the Plant is meeting its emission limits, there is no need for such testing. Mirant is already required to put a PM CEMS in place. The CEMS will provide continuous monitoring, and will demonstrate whether there are compliance issues at the Plant far better than testing for ESP removal efficiency.

Moreover, Mirant demonstrated ESP removal efficiency on Units 2 and 3 in December 2006 (*see* report prepared by TRC dated December 2006 and provided to DEQ on February 16, 2007) (copy attached). This testing required a significant amount of testing personnel and equipment, a large time commitment, and a cost of \$250,000. In light of the fact that the permit will require the installation of PM CEMS for information gathering purposes, ESP efficiency testing is not justified nor worthwhile and should not be included in the permit.

Finally, there is no EPA approved protocol for this exercise. Stack emission levels are what is regulated and therefore there is no basis for this requirement. It is more useful to follow the common practice of using parametric monitoring to evaluate precipitator performance as this can be done on a daily basis rather than annually.

### **III. Questions Raised by the Board**

#### **A. CEMs for All Particulate Matter**

##### **1. Should Continuous Emission Monitoring Systems be required for all Particulate Matter regulated by the Regulation for the Control and Abatement of Air Pollution?**

Although Virginia could consider issuing a proposal to allow sources the option to use PM CEMS in some manner for compliance assurance purposes (as EPA did in its recent revision to the New Source Performance Standards at 40 CFR Part 60, Subpart Da at 72 Fed. Reg. 32710), Virginia could not require the use of PM CEMS as a compliance assurance mechanism for existing standards without reviewing the reasonableness of those standard in light of the change in compliance methods. Among the issues Virginia would need to address are (1) establishment of an appropriate, and presumably longer, averaging time, (2) the effect of the significant margin of error allowed under EPA's Performance Specifications and Quality Assurance procedures on any compliance determination, (3) the potential impact of stratification of the gas stream on the measurement, and (4) the stability of the measurement curve established during initial correlation to the EPA reference method in light of inevitable operational changes at the source.

Unlike CEMS for other pollutants which measure the pollutant in question directly, PM CEM technology does not measure PM mass directly. Instead, the CEMS provide an indirect measure by "calibrating" the monitor's response to short term stack tests (using EPA Method 5) conducted over a range of concentrations that must be sufficient to include the level of the applicable emission standard. This requirement in itself could require the disabling of installed control equipment (e.g., wet flue gas desulfurization) at source sources with a significant pollution control margin at the cost not only of air quality, but also pollution allowances under market-based programs like the Acid Rain Program and the Clean Air Interstate Rule.



Even at the point of initial certification, a PM CEMS meeting the criteria in EPA's Performance Specification 11 (PS 11) can produce responses that differ significantly (on the order of 25 percent) from what would be obtained with EPA Method 5. Although a number of electric utility sources have voluntarily installed PM CEMS under negotiated consent agreement, and EPA recently promulgated rules allowing (but not requiring) their use in some circumstances, there currently is little information on the long term stability of the PS 11 correlations to Method 5 as conditions in the stack gas change over time. Unlike SO<sub>2</sub> and NO<sub>x</sub> CEMS, which are challenged on a frequent basis with gases of a known concentration, there are no PM calibration gases. As a result, PM CEMS responses are reevaluated at much less frequent intervals due to the burdens of Method 5 testing. And, unlike Method 5, PM CEMS sample at a single point, which may not be representative of concentrations across the stack of a stratified gas stream.

Although some of the issues with PM CEMS technology might be addressed in the standard setting process by setting limits based on PM CEMS data collected at sources representative of the range of units subject to the standard, and over a sufficient period time to ensure that any lack of stability in the calibration is taken into account, Virginia has not conducted that kind of analysis. As EPA previously concluded:

When a PM CEMS is used for compliance monitoring, the PM emission limit that is used as a compliance set point should be based on PM CEMS data collected from many representative sources over an extended period (e.g., at least 6 months). The accuracy limitations of a PM CEMS must also be considered when setting an emission limit.

EPA "Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring" (September 2000) at 7-2.

In determining whether PM CEMS would be an appropriate and useful technology, Virginia also would want to consider what limits apply to the source being regulated. Because PM CEMS measure total filterable particulate, they would not be useful for determining compliance with limitations on fine particulate (PM 2.5) or on limits that include condensable particulate matter.

**2. Does the Environmental Protection Agency have an approved methodology for these systems?**

Although EPA has promulgated Performance Specifications and Quality Assurance procedures (under PS 11 and Procedure 2) the purpose of those procedures was simply to specify how to obtain the best correlation that can be achieved by the current technology and how to assess that correlation over time. PS 11 and Procedure 2 do not assess whether that correlation is sufficient for any particular emission limit or how often the correlation should be assessed over time. See 69 Fed. Reg. 1786. EPA left those, and many other operational issues to be addressed in individual rulemakings that might propose to apply the specifications. For this reason, EPA has itself postponed application of PM CEMS at a several source categories (e.g., hazardous



waste combustors and Portland cement kilns) pending further rulemaking to address operational issues, and declined to impose PM CEMS on electric utility sources (see 40 CFR Part 60, Subpart Da). EPA has also declined to consider proposing PM CEMS at a number of source categories because of the significant cost of the technology compared to other available compliance assurance mechanisms, including continuous control device parameter monitoring.

**3. Has the EPA certified an in-stack instrument for this purpose?**

For the reasons outlined above, EPA has not yet promulgated a requirement for use of PM CEMS for any purpose at electric utility sources. Although a number of sources have completed PS 11 correlation testing under negotiated settlement agreements, those monitoring systems are not certified for any regulatory purpose and little is known about the quality of the data they are producing.

**B. Limitations on SO<sub>2</sub> Emissions**

The annual limitation established for SO<sub>2</sub> is too stringent. DEQ's own modeling concluded that the limitations imposed by the Board are far more stringent than necessary to maintain the NAAQS and protect human health and the environment. *See* Michael Kiss e-mail dated April 13, 2007 (Annual SO<sub>2</sub> emissions cap of 6,984 - 8,493 tons would be protective of the NAAQS) (copy attached).

The annual SO<sub>2</sub> limitation included in the original [June 1] state operating permit (3813 tpy) are not based on compliance with the NAAQS. Rather, as DEQ staff testified at the October Board meeting, it was an annual potential to emit based on short-term operating scenarios modeled by Mirant. Based on current modeling and the same operation scenario, it would be a significantly higher number (4566 tpy). The proposed limit constrains plant output with no corresponding environmental benefit. Accordingly, these limits should not be adopted as an operating permit for PRGS.

The annual limitation adopted by the Board in the state operating permit issued to Mirant on June 1, 2007 is currently the subject of litigation, and should not be used as the basis for the SO<sub>2</sub> limitation in the comprehensive state operating permit. The limit is not feasible for this facility in the long term.

**1. Should control equipment performance be used to set limits rather than an array of operating scenarios?**

As described above, the current configuration of the Plant, including the five short stacks, requires that a range of operating scenarios be provided to allow flexibility in Plant operation and protection of the NAAQS. In a state operating permit, there is no basis for imposing equipment performance standards as opposed to operating scenarios, so long as the scenarios are protective of the NAAQS, as is the case here.

**2. Are the operating scenarios impermissible intermittent controls?**

Intermittent controls are a specific dispersion technique by which the rate that pollutants are emitted to the atmosphere is varied according to meteorological conditions and/or ambient concentrations. 40 CFR § 51.101(n). There is no prohibition against providing for intermittent controls through a permit. Intermittent controls, however, can not be relied on in setting ultimate emissions limits. 9 VAC 5-40-20(I)(1)(b); 40 CFR § 51.118(a).

The state operating permit proposed by the Board includes a condition that allows for the operation of different combinations of unit operations, and adjusts emission limitation based on the different operating scenarios.

EPA guidance concerning intermittent controls provides that one purpose of the limitation on the use of intermittent controls is "to make sure stationary sources do not rely upon intermittent controls in order to avoid the application of feasible constant emission controls." *Incorporating Emerging and Voluntary Measures in a State Implementation Plan (SIP)*, U.S. EPA, 10 (September 2004). The proposed state operating permit does not misuse intermittent controls in this manner. Rather, the permit includes emission limitations that are NAAQS compliant under all operating scenarios. The operating scenarios are not based on predictive modeling or meteorological conditions. They are based on electrical reliability and customer demand, and the appropriate limits necessary to assure NAAQS compliance while meeting those demands.

Such provisions do not constitute intermittent controls. *See Memorandum re: E. Helena Lead SIP Attainment Demonstration*, March 2, 1993, in which EPA concludes that time of day restrictions are not impermissible intermittent controls, but rather approvable measures because they are based on historical meteorological data and not real-time data. *Id.* Likewise, a permit condition that allows a facility to decide how to operate the facility to best meet power demand and reliability concerns and provides emission limits that ensure compliance with the NAAQS does not constitute intermittent controls.

**3. Use of Trona**

**a. Should the limit be set to ensure minimum use of the trona system rather than minimum sulfur content?**

The sodium sesquicarbonate system installed by Mirant is effective at reducing emissions of HF and HCl as well as SO<sub>2</sub>. In order to ensure that enough sodium sesquicarbonate is used to address HF and HCl emissions, the draft permit includes a minimum sulfur content for the coal used at the facility. The sulfur content of the coal drives the use of sodium sesquicarbonate, and will ensure that sufficient sodium sesquicarbonate is used to adequately address emissions of HF and HCl.

With respect to HF and HCl, these acid gases are more reactive than SO<sub>2</sub> and therefore are absorbed by trona more readily than SO<sub>2</sub>. Sodium sesquicarbonate reduces emissions of both



HF and HCl by at least 75%. This is supported by the attached Final Report dated December 2006 on testing at PRGS (copy attached) and the attached letter from the sodium sesquicarbonate vendor, Solvay Chemicals, dated May 18, 2007 (copy attached). There are currently no limitations on HF and HCl on PRGS emissions. The draft comprehensive state operating permit contains limitations on emissions of these substances for the first time so there will be a decrease in allowable emissions.

As described above a sodium sesquicarbonate level of 600 lbs/hr will provide adequate assurance that HF and HCl are being controlled. If another sorbent than Sodium sesquicarbonate is approved by DEQ, another minimum injection rate for that sorbent can be developed by the DEQ to assure adequate control.

**b. Can the Board require maximum use of trona system?**

There is a concern about using too much trona. Additional trona usage provides diminishing returns and generates unnecessary solid waste. The Board's authority for issuing state operating permits is to address facilities contributing to a violation of any air quality standard or to establish a source-specific emission standard or other requirements necessary to implement the federal Clean Air Act or the Virginia Air Pollution Control Law. 9 VAC 5-80-800.C. This suggests that the Board can only impose limitations that implement specific federal or state requirements on sources through state operating permits.

DEQ modeling (as well as modeling provided by Mirant) has demonstrated the limitations that will ensure compliance with the NAAQS for SO<sub>2</sub>. The stated reason for the issuance of the state operating permit is to ensure that the Plant does not cause or contribute to an exceedance of the NAAQS. Accordingly, the Board does not have the authority to impose limitations more stringent than that necessary to ensure compliance with the NAAQS and cannot impose requirements on the use of the trona system beyond that necessary to meet those limitations.

Additionally, information has been provided that demonstrates that, at similarly situated plants, a maximum of 50% reduction in SO<sub>2</sub> can be achieved. Accordingly, requiring greater use of trona (in an attempt to achieve greater pollutant reductions) is not achievable and, as stated in the air regulations, therefore unlawful to be included in the final permit.

**C. Inclusion of CAIR and CAMR Requirements**

There are practical difficulties in including CAIR and CAMR requirements as part of a state operating permit. First, the requirements do not immediately become effective. A notice of appeal has been filed for the CAIR nonattainment provisions, and a lawsuit will be filed in the near future. The possibility of the regulations changing between now and their effective date is likely. Accordingly, it would be more efficient to wait until the program becomes effective and all of the allowances can be allocated among sources at the same time.



Moreover, there is no need to impose these requirements now and it would be harmful to the environment in Alexandria to do so. *See, e.g.*, “Effects of Proposed Virginia CAIR Rule Prohibition on Purchasing Allowances in Nonattainment Areas for CAIR Sources on 8-Hour Ozone and PM<sub>2.5</sub> Attainment,” ENVIRON, June 17, 2007. As has been stated by DEQ staff, the system-wide NO<sub>x</sub> reductions under the federal Consent Decree that Mirant is subject to “will result in a greater reduction in ozone levels in the City [of Alexandria] than would be the case if emissions from only the Potomac River Plant were reduced.” Declaration of Thomas R. Ballou, United States v. Mirant, Civil Action No. 1:04CV1136 at paragraph 5 (Dec. 11, 2006) (copy attached).

Second, the regulations provide that it is preferred to have such allocations conducted as part of the Title V process, so that the permit can be federally enforceable.

Third, the CAIR and CAMR requirements that the DEQ and/or the Board believe applicable to PRGS have not yet been determined or presented for public notice and comment. Including them at this juncture will only delay an already overly lengthy permitting process for this facility.

#### **D. Architecture (Scenarios vs. Emission Limits)**

See comments herein noting that the permit is structured to allow maximum operational flexibility while protecting local air quality.

#### **E. Commercial Availability of Parametric Monitoring vs. PM CEMS and Use in Lieu of PM CEMS**

Given the current state of PM CEMS technology, they function essentially the same as Continuous Opacity Monitors, which have been used as parametric monitors. All such devices merely determine whether or not the particulate control equipment is functioning. they do not at this stage determine exactly how well it is operating. That requires a Method 5 stack test.

### **IV. Alternative Permit**

#### **A. Consideration of Alternative Permit**

The state air pollution control regulations provide owners and operators the opportunity to request alternative emissions standards as part of the permitting process. 9 VAC 5-80-850.D. Accordingly, Mirant is proposing the attached state operating permit for the Board’s consideration. As provided in the regulations, alternative permits may be approved by the Board if they protect the NAAQS and restrict emissions below the unit’s potential to emit.

Mirant’s proposed permit was developed by the DEQ staff in response to the Board’s suggestion that an SOP could be developed to authorize the stack merge. It reflects NAAQS protective limits as developed by the DEQ staff using appropriate modeling for a two stack

operation after the stack merge is completed. It is uncontroverted that the stack merge affords increased environmental protection over the current and proposed five stack operation. *See* ENSR Modeling study and June 18, 2007 Report on Effects of Proposed Virginia CAIR Rule Prohibition on Purchasing Allowances in Nonattainment Areas for CAIR Sources on 8-Hour Ozone and PM2.5 Attainment (copies attached).

**B. In considering the alternative permit, the Board must consider four factors, including the relative effect of the alternative permit on the efficiency and competitiveness of the unit.**

The regulations provide that the Board must consider the following factors: (1) the impact upon the ability of the stationary source or emissions unit to operate in a competitive and efficient manner; (2) the previous efforts to reduce actual emissions taken at the owner's initiative; (3) the technological and economic practicality of reducing emissions; and (4) the impact upon the availability and cost of fuels and process materials. 9 VAC 5-80-850.D.

**1. Impact on Efficiency and Competitiveness**

**a. Efficiency**

The alternative permit will greatly increase the Plant's ability to operate in an efficient manner. The units each have a sweet spot at our near full load. The efficiency of each unit is diminished when it must curtail pulverizer operation, heat input and steam flow. The two stack permit allows each unit to operate in a much more efficient manner than the five stack arrangement. Moreover, the five stack permit prohibits all the units from operating simultaneously. This adversely affects the efficiency of PRGS as a whole.

Moreover, the two stack permit will increase the DEQ's efficiency in monitoring compliance of the plant. Most significantly, the plant would only have one SO<sub>2</sub> limit for all available operating scenarios.

**b. Competitiveness**

If the alternative permit is not approved, PRGS's ability to compete in the PJM market place is curtailed significantly. This lack of competition has obvious deleterious effects on PRGS. Moreover, this artificial restraint imposed on PRGS by not approving the 2 stack permit has serious effects on the cost of energy in the SW MAAC area. The incremental energy cost (running the 5 stack configuration versus the 2 stack configuration) for consumers is approximately \$250 million per year based on current gas prices. In addition, consumers will also bear substantially higher costs associated with capacity payments. Information about the capacity payments is provided separately in a confidential business information submittal. Many of these affected consumers have low incomes (and are minorities) and the combination of these two increased costs will impose a substantial hardship on them.

## **2. Efforts to Reduce Emissions**

Mirant has taken significant efforts to reduce actual emissions. Mirant has voluntarily conducted various studies to better understand Plant emissions and their impact on local air quality. Based on those studies, Mirant installed low NOx Burners and over fire air systems to reduce NOx. Mirant voluntarily proposed a project to use trona injection to reduce emissions while simultaneously merging the stacks (from 5 stacks to 2 stacks) to alleviate the downwash problem that has contributed to local air quality concerns. Mirant has completed the trona injection portion of that project but regulatory obstacles have prevented the project from being fully implemented.

## **3. Technological and Economic Practicality of Further Reductions**

Based on the studies completed by Mirant, the stack merge project, combined with trona injection, is the most technologically achievable and economically feasible means of reducing emissions from the Plant and ambient impacts. As the alternative permit ensures completion of this project, it should be issued.

## **4. Impact on Availability and Cost of Fuels and Process Materials**

Finally, the alternative permit is the best means of protecting local air quality given the availability and cost of fuels and process materials.

### **C. Proposed Alternative Permit is Only Legal Option Available for Regulating the Plant**

As described above, the proposed alternative permit is within the Board's authority. The state operating permit proposed for public comment, on the other hand, is without legal basis. As discussed herein, the permit issued for public notice reads like a permit to construct, as it attempts to impose emission limitations and operating restrictions far more stringent than necessary to achieve compliance with the NAAQS.

The Board has exercised jurisdiction over this Plant and is requiring that a state operating permit be issued pursuant to 9 VAC 5-80-800. That regulation provides that the Board may issue a state operating permit to (1) cap the emissions of a stationary source contributing to a violation of any air quality standard or (2) establish a source-specific emission standard to implement the federal Clean Air Act or Virginia Air Pollution Control Law. The Board has stated that the purpose of the permit is to ensure compliance with the NAAQS. Accordingly, the permit can only include those measures necessary to comply with the NAAQS, and should not go beyond that to include overly stringent operational restrictions or emission limitations.

## **Conclusion**



The state operating permit proposed by the Board is overly stringent and includes unnecessary provisions that will have a significant adverse effect on the operation of the Plant. Moreover, the proposed permit has some technical deficiencies that must be addressed, as noted herein. The alternative permit proposed by Mirant is protective of the NAAQS, has a greater likelihood of resolving local air quality concerns on a long-term basis, and includes requirements that are technically and economically feasible. Accordingly, the alternative state operating permit proposed by Mirant is the option that is legally and technically sound, and should be issued to the Plant.

Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Driscoll", written over the word "Sincerely,".

Robert Driscoll

Mirant Potomac River, LLC  
1400 North Royal Street, Alexandria, VA 22314  
T 703 838 8200

November 19, 2007

**By Hand**

Terry Darton  
thdarton@deq.virginia.gov  
Air Permit Manager  
DEQ Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

Re: Comments on Draft State Operating Permit  
for the Mirant Potomac River Generating Station  
Response to Anticipated Comments of the Opponents to the Plant

Dear Terry:

Mirant provides the following comments on the proposed State Operating Permit for the Mirant Potomac River Generating Station ("PRGS") in response to those it anticipates will be submitted by opponents of the plant, such as the City of Alexandria. As an initial matter, these opponents' motive to shut down the Mirant plant for reasons unrelated to environmental protection is well documented.<sup>1</sup> Their comments should be read in light of that ulterior motivation.

1. PM<sub>2.5</sub> NAAQS

Concerns may be raised about PM<sub>2.5</sub> emissions and compliance with the PM<sub>2.5</sub> National Ambient Air Quality Standard ("NAAQS"). All PM<sub>2.5</sub> monitors in Virginia, including those adjacent to PRGS show attainment with the NAAQS. (The nonattainment designation for Northern Virginia is based on monitoring in Maryland and the District of Columbia.) Moreover,

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<sup>1</sup> In recent years the City of Alexandria ("City") has waged a multi-faceted campaign to close the Facility. Those efforts have included: (1) seeking or advocating state legislation to "sunset" the Plant and to prevent Mirant from participating in the emission allowances trading program that is available to every other affected stationary source in the Commonwealth; (2) attempting to revoke the zoning and land use approvals previously granted to the Facility (struck down by the Circuit Court for the City of Alexandria, whose decision was affirmed by the Supreme Court of Virginia in *Alexandria City Council v. Mirant Potomac River LLC*, \_\_\_ Va. \_\_\_, 643 S.E. 2d 203 (2007)); (3) pressuring state officials in Richmond to delay or deny necessary approvals for improvements at the Plant; (4) petitioning the Board to take the unprecedented step of assuming responsibility for decisions concerning permitting at the Facility; (5) intervening in proceedings in U.S. District Court so as to block a consent decree settling regional air quality issues; and (6) thwarting all attempts by Mirant and DEQ to resolve and compromise issues including the stack merge. The City's obsession with the Plant has led it so far as to thwart measures that would improve air quality and protect public health in Alexandria.

the Virginia DEQ has proposed a PM<sub>2.5</sub> SIP that shows attainment in the Northern Virginia area. Ambient concentrations of PM<sub>2.5</sub> will decline as the CAIR Rule, which imposes a cap and trade system (or in the case of Virginia's CAIR Rule for nonattainment areas, an absolute cap) on NO<sub>x</sub> and SO<sub>2</sub> emissions, is implemented beginning in 2009.

While EPA has adopted a NAAQS for PM<sub>2.5</sub>, it recognizes the technical difficulties in its implementation in any permitting process.<sup>2</sup> In particular, PM<sub>2.5</sub> is emitted directly from combustion and material handling and other sources and it is formed through chemical reactions among chemical constituents in the atmosphere. There is no accepted way to model the effects of a single source on ambient PM<sub>2.5</sub>, thus, there is no way to demonstrate using traditional computer modeling that a source does not cause or contribute to an exceedance of the PM<sub>2.5</sub> NAAQS. As a practical method of addressing these difficulties, DEQ has adopted a written policy requiring use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> in its permitting process. See, Commonwealth of Virginia State Implementation Plan Revision, Certification of § 110 (a)(2)(D)(i) Requirements for the 8-Hour Ozone and PM<sub>2.5</sub> NAAQS. (Copy attached.) Virginia's policy is based on and incorporates by reference EPA's policy that PM<sub>2.5</sub> should be used as a surrogate for PM<sub>2.5</sub>. See Memorandum from Stephen D. Page, Director re Interim Implementation of New Source Requirements for PM-2.5 Nonattainment Areas ("EPA's Guidance Memo") (copy attached).<sup>3</sup> For all of these reasons, the proposed permit approach to PM 2.5 is lawful and consistent with agency policy and practice. As Both DEQ and EPA recognize, given the lack of traditional modeling tools, it is difficult to implement a PM<sub>2.5</sub> limit in a permit. Both DEQ and EPA have taken the position that PM<sub>10</sub> is a surrogate for PM<sub>2.5</sub>. Thus the proposed permit is lawfully based on modeling showing compliance with the PM<sub>10</sub> NAAQS.<sup>4</sup>

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<sup>2</sup> EPA published an Advanced Notice of Proposed Rulemaking ("ANPR") in conjunction with the PM NAAQS rule. The ANPR describes EPA's preferred timeline for implementing the revised PM NAAQS. The timeline calls for designations to be effective in early 2010. SIPs would be due three years later (2013) and the earliest attainment deadline would be 2015. This timeline does not solve your problem, but should take pressure off any concern about having to substantively deal anytime soon with the new daily PM<sub>2.5</sub> standard. The preferred timeline is summarized at 71 Fed. Reg. 6723 (Feb. 9, 2006).

<sup>3</sup> We note that last month, EPA proposed a rule to address the establishment of increments for PM<sub>2.5</sub>. The publication of that proposed rule has no legal effect. Moreover, EPA's position in its preamble to the proposed implementation rule for PM<sub>2.5</sub> is that until that implementation rule is finalized and adopted as part of the SIP, each state should continue to follow EPA's Interim Guidance Memo.. 72 Fed. Reg. 54116 (Sept. 21, 2007). More specifically, in the PM<sub>2.5</sub> increments proposal, EPA recognizes that there will be a transition period between the time that the new increments are adopted and the time that states get their new SIPs approved. Consistent with past practice, EPA proposes to allow states to keep using PM<sub>10</sub> increments during this transition period. More specifically, EPA suggests that permit applications submitted and found to be complete prior to the effective date of the new increment may be processed using the old increment. The relevant discussion is at 72 Fed. Reg. 54143 (Sept. 21, 2007).

<sup>4</sup> Use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> was approved by the EPA Environmental Appeals Board and the Seventh Circuit Court of Appeals. *In re BP Cherry Point*, PSD Appeal No. 05-01, \_\_\_ E.A.D. \_\_\_, slip Opinion at \_\_\_; *In re Prairie State Generating Co. LLC*, PSD Appeal 05-05, \_\_\_ E.A.D. \_\_\_, slip. op. at \_\_\_, affirmed \_\_\_ F.3d \_\_\_ (7<sup>th</sup> Cir. 2007).



**2. The existing dual electrostatic precipitators ("ESPs") are preferable to baghouses.**

In the past, the City of Alexandria has requested installation of baghouses at PRGS. Mirant invited the City and technical consultants from Hamon Research Cottrell and Sargent & Lundy to visit PRGS to review the feasibility of retrofitting baghouses at the plant. The consultants concluded that the existing dual (hot and cold side) ESPs in tandem are an excellent particulate control technology, and there is no reason to install any additional particulate controls or retrofit the system with a baghouse. Additionally, new baghouses, either installed outside the plant or retrofitted in place of the existing cold precipitators are not technically feasible and would not provide better particulate control performance than the equipment in place today. This was confirmed by testing conducted in December 2006, which shows that the dual ESPs operate at more than 99% removal efficiency. The results are presented in a report dated December 2006, prepared by TRC and submitted to the DEQ on February 16, 2007.

Even if the City's arguments were correct, and they are not, any retrofitting with baghouses would have a significant incremental cost, *i.e.*, well over a million dollars per ton of incremental PM removed.<sup>5</sup> More importantly, in light of the incessant false complaints about opacity emissions from PRGS, it is important to note that the ESPs have a higher tolerance for malfunctions than do baghouses. A baghouse has a single fabric filter which can break allowing uncontrolled emissions. In contrast the inherent design of the dual ESPs have significant redundancy built in. Not only are there two ESPs, there are multiple fields within each ESP. Thus, while a baghouse either operates well or not at all an ESP seldom results in uncontrolled emissions.

**3. Emission limits protect the NAAQS**

All permit limits in the Board-proposed five-stack and Mirant-proposed two-stack permits have been modeled to demonstrate NAAQS compliance. Under the applicable legal standards for issuing a permit set out in 9 VAC 5-80-850, that is the sole criteria by which the sufficiency permit should be judged. Nevertheless, we anticipate comments suggesting that the emission limits are not stringent enough.

**a. PM emissions**

We anticipate there may be complaints about the particulate matter emissions. The proposed 0.055 lbs/MMBTU limit is based on NAAQS modeling and represents a 54% reduction over the existing limit on PRGS. We also anticipate that the City will again raise issues related to ambient particulate levels. A report dated May 4, 2007 based on monitoring data shows that the level of PM<sub>10</sub> and PM<sub>2.5</sub> adjacent to PRGS agrees closely with monitoring data collected by DEQ across the region (copy attached). This demonstrates that the particulate levels are a regional, urban phenomena unrelated to Mirant's operations. To the extent there might be some

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<sup>5</sup> Since the dual ESPs are already in place it is appropriate to consider incremental rather than costs. Mirant estimates that five baghouses at PRGS would cost approximately \$50 million. If baghouses improved annual PM emissions by 10% (or approximately 56 tons, based on 2002-03 emissions), the incremental cost of PM reduction would be \$893,000./incremental ton of PM removed.

localized emissions of particulate in Alexandria, it is far more likely to be from the uncontrolled particulate emissions from jet engines at Ronald Reagan National Airport than from PRGS (copy attached). In sum, the particulate emissions limits in the proposed permit are NAAQS protective and represent a significant reduction in emissions.

**b. Annual Emissions**

We also anticipate that opponents will once again calculate annual emissions based on the short-term emission limits for PM, NO<sub>x</sub> and SO<sub>2</sub> and 2006 heat input in an attempt to demonstrate that the new annual emission limit will result in an increase over the 2006 annual emission rate. As an initial matter such a comparison is irrelevant since a State Operating Permit is not concerned with increases or decreases in emissions as would be the case for a construction permit. Even if "netting" concepts were relevant, as the City well knows, 2006 emissions represent abnormally low operating conditions at the plant because it was shut down and/or operated at curtailed levels under DOE and EPA orders to accommodate concerns about downwash for a significant part of the year until the Trona system could be installed and tested. Simply put, 2006 emissions are not representative of the normal operations the plant as required for establishing a baseline. Rather, it reflects artificially curtailed operations.

**c. Achievability**

The opposition is likely to attempt to argue that the plant can achieve lower emission levels than those imposed in the permit limits. In the past they have pointed to limited data showing that under certain favorable conditions, the plant can operate at emission levels lower than those in the proposed permit. However, the plant must meet its emission limit not only on its best day and its average day but also under worst case conditions. To address this problem, the regulatory criteria regarding the achievability of limits prohibits the Boards from imposing limits that are not achievable:

Emission standards shall only include limitations that are determined by the board to be achievable through application of production processes or available methods, systems, and techniques, including, but not limited to, any of the following: emissions control equipment, fuel cleaning or treatment, fuel combustion techniques, or substitution of less toxic or nontoxic materials.

9 VAC 5-80-850.C.3. The concept of achievability has been articulated by the Environmental Appeals Board of EPA to focus on levels of emission reductions that have been achieved in practice so as to allow consistent compliance and to provide for the use of a safety factor to allow for compliance under worst case conditions. See *In re Newmont*, slip op. at \_\_\_\_ *In re Knauf Fiber Glass*, 18 E.A.D. at 121, 128-131 (EAB, 1998); *In Re Prairie State*, 19 E.A.D. \_\_\_\_; slip op at 55-76 (EAB, August 24, 2006).

**d. Opacity**



We also anticipate that the City will complain about opacity limits of 20%. This is the level authorized by the regulations. Permit provisions should reflect the law and sound science and not the desires of a vocal minority of citizens seeking to shut down the plant in furtherance of their sense of aesthetics or for economic gain.

**4. The Trona system does not increase particulate matter or trigger new source review.**

Testing performed between October 2005 and December 2006 show that the use of Trona does not increase and may actually decrease particulate emissions. This information was provided to the DEQ in test reports. Opacity data shows the opacity levels and compliance has varied by year between 2004 and 2006. But there is no upward trend since Trona was introduced in 2006 (copy attached).

Moreover, DEQ has reached the conclusion that the Trona system does not trigger PSD. See memorandum from James Sydnor to Judith Katz dated April 27, 2007 (copy attached).

**5. The Trona health impacts have been evaluated.**

Mirant has submitted documentation indicating that Trona has no health impacts (copy attached).

**6. The permit requires installation of PM and CO CEMS.**

The proposed permit requires the installation of continuous emission monitors for PM and CO. The operation and use of the PM CEMS for compliance purposes will be phased in as EPA develops an appropriate Reference Method. Existing CO monitors at the plant are not certified, it will take some time to select, install and certify new monitors on all five units. Moreover, the CO emissions in the past have been calculated based on AP-42 emission factors. Therefore it is not appropriate to compare the emissions calculated in the past to those measured by the CEMs for any purpose going forward.

We note that past experience indicates that the opponents to PRGS have made numerous misstatements of mischaracterizations. Mirant plans to review the full set of comments on the proposed SOP and bring any such misstatements to the DEQ's attention. In the meantime, please call me if you have any questions.

Sincerely



Robert Driscoll

**COMMONWEALTH OF VIRGINIA  
STATE IMPLEMENTATION PLAN REVISION  
FOR**

**CERTIFICATION OF § 110(a)(2)(D)(i) REQUIREMENTS  
FOR THE 8-HOUR OZONE AND PM<sub>2.5</sub>  
NATIONAL AMBIENT AIR QUALITY STANDARDS**

This document is being submitted as a revision to the State Implementation Plan (SIP) for the Commonwealth of Virginia to certify that it is meeting the requirements of the federal Clean Air Act related to interstate pollution transport for the 1997 8-hour ozone and PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). As discussed below, this SIP submission is consistent with the August 15, 2006 William T. Harnett memorandum, "Guidance for State Implementation Plan (SIP) Submissions to Meet Current Outstanding Obligations Under Section 110(a)(2)(D)(i) for the 8-Hour Ozone and PM<sub>2.5</sub> NAAQS."

Section 110(a)(1) of the federal Clean Air Act provides that states must adopt and submit SIPs to the EPA within 3 years after the promulgation of a new or revised NAAQS, meeting the provisions of §110(a)(2). Therefore, SIP submissions addressing the requirements related to §110(a)(2) for the 8-hour ozone and the PM<sub>2.5</sub> NAAQS were due no later than July 2000. Due to litigation of both the 8-hour ozone and the PM<sub>2.5</sub> NAAQS, the Commonwealth did not submit a SIP submission to satisfy the §110(a)(2) requirements by July 2000. EPA published a finding of failure to submit in the Federal Register on April 25, 2005 (70 FR 21147), with an effective date of May 25, 2005. The Federal Register notice started a 2-year clock that ended on May 25, 2007, for EPA to issue a Federal Implementation Plan (FIP) to address the interstate pollution transport requirements called for under § 110(a)(2)(D)(i) if states fail to submit the required SIP submittal. Note that the Clean Air Interstate Rule (CAIR) FIP was promulgated in part to meet this requirement. On August 15, 2006, a memorandum was issued by William T. Harnett, "Guidance for State Implementation Plan (SIP) Submissions to Meet Current Outstanding Obligations Under Section 110(a)(2)(D)(i) for the 8-Hour Ozone and PM 2.5 NAAQS," in order to provide guidance to states for meeting the § 110(a)(2)(D)(i) requirements.

Section 110(a)(2)(D)(i) of the federal Clean Air Act requires each state to submit a SIP that contains adequate provisions:

- (i) prohibiting . . . any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will -
  - (I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary air quality standard, or
  - (II) interfere with measures required to be included in the applicable implementation plan for any other State under Part C to prevent significant deterioration of air quality or to protect visibility.

These specific requirements, and how the Commonwealth has met these requirements, is discussed in detail below.



## **Interstate Transport**

Virginia is covered by CAIR for annual and seasonal ozone, and for sulfur dioxide. The Harnett memorandum advises that states covered by CAIR can comply with §110(a)(2)(D)(i) obligations relating to "significant contribution" and "interference with maintenance" requirements by complying with the CAIR requirements. The memorandum advises that states within the CAIR region need not submit a separate SIP revision to satisfy the § 110(a)(2)(D)(i) requirements provided that they submit a SIP revision to satisfy CAIR. Virginia submitted a CAIR SIP to EPA on March 30, 2007 and is therefore not required, as spelled out in the Harnett memorandum, to make this particular SIP submittal.

## **New Source Review**

With respect to nonattainment and prevention of significant deterioration (PSD) new source review (NSR), the Harnett memorandum advises that a state may fulfill its §110(a)(2)(D)(i) requirements by confirming that (i) major stationary sources for 8-hour ozone and PM<sub>2.5</sub> are currently subject to nonattainment and PSD NSR permitting programs, and that it is on track to meet the SIP requirements to address the Phase II ozone implementation rule requirements; and (ii) major sources are subject to nonattainment and PSD NSR permitting programs implemented in accordance with EPA's interim guidance calling for use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> related to the nonattainment and PSD NSR program requirements.

Virginia confirms that (i) major stationary sources for 8-hour ozone and PM<sub>2.5</sub> are currently subject to nonattainment and PSD NSR permitting programs, and that it will submit SIPs to address the Phase II ozone implementation rule requirements; and (ii) major sources are subject to nonattainment and PSD NSR permitting programs implemented in accordance with EPA's interim guidance calling for use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub> related to the nonattainment and PSD NSR program requirements.

## **Visibility**

The Harnett memorandum advises that the §110(a)(2)(D)(i) requirement related to protection of visibility is deferred until such time as the state submits its regional haze SIP. Virginia's regional haze SIP will assess whether there is interference with measures required to be included in the applicable implementation plan for any other state to protect visibility.

## **Conclusion**

The Commonwealth of Virginia confirms that it meets requirements of §110(a)(2)(D)(i) of the federal Clean Air Act for the 8-hour ozone and PM<sub>2.5</sub> NAAQS, and does not significantly contribute to nonattainment or interference with maintenance of the NAAQS in another state.

## MEMORANDUM

SUBJECT: Implementation of New Source Review Requirements in  
PM-2.5 Nonattainment Areas

FROM: Stephen D. Page  
Director

TO: See Addressees

### **What is the purpose of this memorandum?**

This memorandum provides guidance on the implementation of the major New Source Review (NSR) provisions under title I, Part D of the Clean Air Act (Act) in fine particulate (PM-2.5) nonattainment areas in the interim period between the effective date of the PM-2.5 National Ambient Air Quality Standard (NAAQS) designations (April 5, 2005) and when we promulgate regulations to implement nonattainment major NSR for the PM-2.5 NAAQS. This memorandum also re-affirms the Memorandum from John S. Seitz, Director Office of Air Quality Planning and Standards, to Regional Air Directors, *Interim Implementation of New Source Review for PM2.5* (Oct. 23, 1997) that applies in Prevention of Significant Deterioration of Air Quality (PSD) programs for PM-2.5 attainment and unclassifiable areas.

### **Why are we issuing this memorandum?**

On January 5, 2005, we promulgated nonattainment designations for the PM-2.5 NAAQS. These designations become effective on April 5, 2005. *See* 70 FR 944. Under Section 172(b) of the Clean Air Act (Act), the Administrator may provide States up to 3 years from the effective date of designations to submit State Implementation Plan (SIP) revisions meeting the applicable nonattainment requirements. In the near future, we plan to issue a proposed and final rule setting forth the schedule for these plan submissions. We also plan to establish the requirements that State and local agencies (States) and Tribes must meet in their implementation plans for attainment of the PM-2.5 NAAQS including provisions to address the major NSR requirements of title I, Part D of the Act (nonattainment major NSR program). Notwithstanding the absence of these implementing regulations, we interpret Section 172(c)(5) of the Act to require States to issue major New Source Review (NSR) permits for the construction and major modifications of major stationary sources located in any nonattainment area. Accordingly, once nonattainment designations for PM-2.5 become effective on April 5, 2005, States must issue major NSR permits that address the Section 173, nonattainment major NSR requirements for PM-2.5. We are issuing this memorandum to address how States should implement major NSR for PM-2.5 until we promulgate the PM-2.5 implementation rule.



### **What applies in PM-2.5 nonattainment areas?**

During the SIP development period, EPA generally requires States to issue major NSR permits using the authority of States' approved nonattainment major NSR programs (to the extent these provisions apply automatically to the pollutant) or using the authority of 40 CFR Part 51, Appendix S (where a State lacks a nonattainment major NSR program covering the pollutant.)<sup>1</sup> However, in this case, the absence of a final PM-2.5 implementation rule makes administering a PM-2.5 nonattainment major NSR program infeasible. Accordingly, until we promulgate the PM-2.5 major NSR regulations, States should use a PM-10 nonattainment major NSR program as a surrogate to address the requirements of nonattainment major NSR for the PM-2.5 NAAQS. By applying a PM-10 nonattainment major NSR program in the interim period, States will effectively mitigate increases in PM-2.5 emissions and protect air quality because PM-2.5 is a subset of PM-10 emissions.

Using the surrogate PM-2.5 nonattainment major NSR program, States should assume that a major stationary source's PM-10 emissions represent PM-2.5 emissions and regulate these emissions using either Appendix S or the State's SIP-approved nonattainment major NSR program for PM-10. In most cases, we believe that States will need to rely on Appendix S for authority to issue permits during this interim period, because their existing State programs are not designed to accommodate the surrogate PM-2.5 nonattainment major NSR program.<sup>2</sup> Moreover, we expect that most States will need to implement a transitional PM-2.5 nonattainment major NSR program under Appendix S even after we finalize the PM-2.5 implementation rule until EPA approves changes to the States' SIP programs.

### **What is the major stationary source threshold and offset ratio under the surrogate PM-2.5 nonattainment major NSR program?**

Section 302(j) defines a major stationary source as any source that emits or has the potential to emit 100 tpy of any regulated pollutant, and Section 173(c) of the Act requires major stationary sources to offset emissions increases resulting from construction or major modifications in a ratio of at least 1 to 1. Appendix S and the majority of SIP-approved PM-10 nonattainment major NSR programs apply this major source threshold and corresponding offset requirement. Accordingly, these provisions should be used to define the major stationary source threshold and offset ratio for the surrogate PM-2.5 nonattainment major NSR program. This means that during the interim period, a source is major for PM-2.5 if it emits or has the potential

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<sup>1</sup>The terms of 40 CFR 52.24(k), Appendix S of Part 51 provide provisions for a transitional nonattainment major NSR program until we approve a State's Part D major NSR program into the SIP.

<sup>2</sup>If a State lacks authority to issue a major NSR permit consistent with these requirements, then EPA will issue the permit under the authority of 40 CFR 52.24(k) and Appendix S.

to emit 100 tpy of PM-10.<sup>3</sup> A State that uses its SIP-approved PM-10 program as a surrogate PM-2.5 program need not apply the separate major stationary source level for serious PM-10 nonattainment areas in the surrogate PM-2.5 program. We do not interpret the specific PM-10 requirements of Part D, Subpart 4 of the Clean Air Act to apply to PM-2.5 and do not believe they should be applied under a surrogate PM-2.5 nonattainment major NSR program.

For any major stationary source whose particulate emissions are predominantly coarse particulate (particulate matter that ranges in size between PM-10 and PM-2.5), assuming that all of the source's PM-10 emissions represent the source's PM-2.5 emissions could inappropriately trigger nonattainment major NSR for PM-2.5. To avoid such an outcome, a source may quantify its PM-2.5 fraction. One approach is to apply two test methods in series - Conditional Test Method 40 (which adds a PM-2.5 cyclone separator between the Method 201A cyclone and filter) followed by the Method 202 sampler to collect condensable materials. The sum of the PM mass in these two fractions (i.e., the Conditional Test Method 40 filterable mass plus the Method 202 condensable mass) represents the primary PM-2.5 emissions from the source for the test period. Under appropriate circumstances (e.g., construction of a new unit, where it is not possible to conduct testing prior to start up), testing of similar existing units can be an appropriate means of obtaining relevant emissions data. Also, other approaches for quantifying PM-2.5 emissions besides the testing methods described above would be considered where they can be shown to produce reliable data.

If the source demonstrates that it is not a major stationary source for PM-2.5, then the nonattainment major NSR provisions for PM-2.5 need not be applied to the source. Conversely, if a source is major for PM-10 and does not quantify its PM-2.5 emissions, then States should presume that the source is major for PM-2.5 and subject it to the surrogate PM-2.5 nonattainment major NSR program if it constructs a major stationary source or undergoes a major modification.

**What is the significant emissions rate for the surrogate PM-2.5 nonattainment major NSR program?**

On July 1, 1987, we established a significant emissions rate for PM-10 of 15 tpy. *See* 52 FR 24683. States should use this rate for the surrogate PM-2.5 program. At the time we established the 15 tpy significant emissions rate, we amended only our PSD regulations to incorporate the PM-10 value because the PM-10 NAAQS did not yet apply to nonattainment areas. Nonetheless, we established the PM-10 significant emissions rate through notice and

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<sup>3</sup>The definition of PM-10 includes condensible particulate matter. For a detailed discussion of condensible particulate matter, see the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990 (April 16, 1992, 57 FR 13542).



comment rulemaking; and, accordingly, the same value should apply for PM-10 under Appendix S and State SIP-approved programs in the interim period.<sup>4</sup>

**Will any precursors be regulated under the surrogate PM-2.5 nonattainment major NSR program?**

Not at this time. Section 302 (g) includes precursors to the formation of any air pollutant within the term "air pollutant" to the extent the Administrator identifies the precursors for the particular purpose for which the term "air pollutant" is used. To date, the Administrator has not identified any precursors to the formation of PM-2.5 for purposes of the major NSR program. On November 5, 2003, the Administrator proposed to require that regional emissions analysis for the purposes of transportation conformity under Section 176(c) of the Act include certain precursors (68 FR 62690). In the Clean Air Interstate Rule, we require states to reduce emissions of NOx and SO2 on the grounds that they are precursors for PM-2.5. However, several novel issues need to be resolved before the NSR program can be applied to PM-2.5 precursors (e.g., how many SO2 or NOx offsets will be needed to accommodate the fine particles formed by these constituents; can SO2 emissions reductions be used to offset NOx emissions, and vice versa). We plan to request comment on regulating these pollutants and other potential PM-2.5 precursors for purposes of major NSR in the PM-2.5 implementation rule.

**What major NSR requirements apply in PM-2.5 attainment and unclassifiable areas?**

The revised NAAQS for particulate matter, which include the revised NAAQS for PM-10 and new NAAQS for PM-2.5, became effective on September 16, 1997. On October 23, 1997, we issued a memorandum addressing the interim use of PM-10 as a surrogate for PM-2.5 in meeting Prevention of Significant Deterioration of Air Quality Program (PSD) provisions for PM-2.5 as required by title 1, Part C of the Act. See Memorandum from John S. Seitz, Director Office of Air Quality Planning and Standards, to Regional Air Directors, *Interim Implementation of New Source Review for PM2.5* (Oct. 23, 1997). This memorandum referenced provisions of Part C of the Act which we interpret to require PSD permits for PM-2.5 upon the effective date of the PM-2.5 NAAQS, and identified significant technical difficulties with implementing PSD for PM-2.5 because of limitations in ambient monitoring and modeling capabilities. Because we have not promulgated the PM-2.5 implementation rule, administration of a PM-2.5 PSD program remains impractical. Accordingly, States should continue to follow the October 23, 1997, guidance for PSD requirements.

This memorandum presents EPA's policy on the implementation of major NSR requirements until EPA promulgates a final PM-2.5 implementation rule. The statements in this policy guidance do not bind State and local governments and the public as a matter of law.

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<sup>4</sup> We intend to issue a final rule adding a PM-10 significant emissions rate of 15 tpy to Appendix S in a forthcoming rulemaking.

If you have any questions concerning this memorandum, please contact Raj Rao at (919) 541-5344, or Lynn Hutchinson at (919) 541-5795.

Addressees:

Michael Kenyon, Region 1  
Walter Mugdan, Region 2  
Judith Katz, Region 3  
Beverly Bannister, Region 4  
Stephen Rothblatt, Region 5  
Carl Edlund, Region 6  
William Spratlin, Region 7  
Richard Long, Region 8  
Deborah Jordan, Region 9  
Rick Albright, Region 10

cc:

Bill Hamett  
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